

## Coaxial electromagnetic wave injection and electron cyclotron resonance ion source

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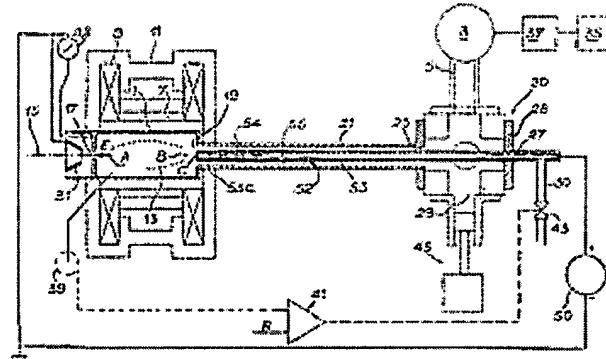


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The present invention relates to an electron cyclotron resonance (ECR) ion source comprising an enclosure (1) containing an electron and ion plasma and a magnetic structure (11) surrounding the enclosure and that produces therein two radial and axial magnetic fields to ensure a confinement in the enclosure. A transition cavity (20) is connected to the enclosure by a first and a second ducts (21, 52) ensuring the transmission of said waves to the enclosure. The first duct is conductive and the second duct, located in the center of the first, is partly conductive and permits the introduction of a preionized gas into the enclosure. The enclosure and the second duct are connected to two power supply sources having the same polarity. The invention has applications in the field of particle accelerators.



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